

## Whiteboards' Impact on Teaching Seen as Uneven



Math teacher Lonnise Gilley uses an interactive whiteboard at Kent County High in Chestertown, Md.  
—Christopher Powers/Education Week

By **Kathleen Kennedy Manzo**

*Chestertown, Md.*

Students hop out of their seats during Lonnise Gilley's lessons as they compete to solve a geometry problem or compare the sides of color-coded shapes on the board in front of the class. As Gilley moves around the room probing students for answers, she engages the 9th graders in an interactive discussion on the Pythagorean theorem and the rules for classifying triangles.

Interactive is the key word in Gilley's class at Kent County High School here, a quality that is facilitated, she says, by the high-tech whiteboard mounted on the wall in front of the classroom. Students take turns tapping the board with the controller pen to move the shapes into categories or calculate a complex problem. Later, they pass the pen quickly in a tag-team challenge at the board and use hand-held remote controls to show what they've learned about the day's lesson.

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Here and across the country, the traditional chalkboards that have been teachers' primary tool for presenting content for more than two centuries are quickly being erased from classrooms. As educators look for ways to present subject matter in more engaging ways that also develop some of the technical skills students need to succeed in the high-tech workplace, more and more administrators and parent-teacher organizations are purchasing interactive whiteboards for their schools.

The large, computerized screens—which allow Internet access, video and audio presentations, digital assessments using remote clickers, and recorded lessons for replaying later—are seen by proponents as an investment in modernizing classrooms to meet the needs of the digital generation. But while the boards have gained a loyal following among even old-school teachers, at a cost of up to \$5,000 a classroom they have also drawn significant criticism as being nothing more than an expensive update on an age-old teaching tool.

For Gilley and many of her colleagues in Maryland's 2,400-student Kent County school district, however, the investment has paid off in the dramatic way the tools have enhanced their teaching and improved students' engagement with even the most tedious content.

"What makes it worthwhile are the interactive features and getting the kids at the board to connect with the material, because on the whiteboard you can present it in a way you cannot do with a chalkboard or overhead projector," says Gilley, who began teaching a decade ago after a career in business. The ability to present multimedia material that is verbal, visual, auditory, and interactive, she says, is essential to draw today's students into the subject matter.

"I don't believe you have to trick kids into learning, because they like learning new things," she says, "but you almost have to have technology to capture their attention anymore."

Joy Maine, a longtime art teacher at Chestertown Middle School, did not see it that way when she was asked to give up her chalkboard for a whiteboard. At first, she refused to make the change. Now, it is a prominent feature in all of her lessons. After years of drawing on a chalkboard during art history lessons, or having students view art pieces in thumbnail photos in textbooks, Maine can now display brightly lighted images on the whiteboard that can be expanded and manipulated as needed.

"I went from, 'No, I don't want it,' to being obsessed with it," Maine says. "I can take kids through a lesson step by step and it's visual. You can see the textures in a Monet painting, even from the back of the classroom."

In biology class at Kent County High School, 9th graders use a whiteboard to watch a simulation of DNA

## Beyond Teacher Chalk Talk

Art teacher Joy Maine discusses how she incorporates the use of an interactive whiteboard into her classroom lessons.

—Video by Christopher Powers/Education Week

replicating, culinary arts students touch an interactive map on the board to learn about foods of the world, and students with profound disabilities use the device to practice tracing letters and make colorful charts showing patterns.

Nearly 100, or 60 percent, of the teachers in the Kent County schools have volunteered to use the whiteboards, which have cost the district nearly half a million dollars so far in equipment and training. The teachers are required to apply for the program, as well as attend summer training sessions and monthly follow-ups, participate in a teacher blog discussion, and study the literature on best uses of the tools.

"The teachers have to agree to go through this rigorous process so that we know they are going to use the technology to augment instruction," says James C. Corns, the district's supervisor of educational technology.

### **'Glorified Chalkboard'**

Such a carefully designed rollout, featuring extensive professional development and ongoing support services, does not always occur when districts decide to put the whiteboards in classrooms, critics say. There has been criticism that in too many classrooms, they are nothing more than fancy, expensive chalkboards, especially when their interactive features are ignored by teachers who don't know how or refuse to use them.

Librarians have decried the expense of whiteboards at a time when budget shortfalls have led to a scarcity of traditional resources such as books and staffing. Some ed-tech advocates argue that technology money may be better spent on laptops or mobile devices that provide 1-to-1 computing for students.

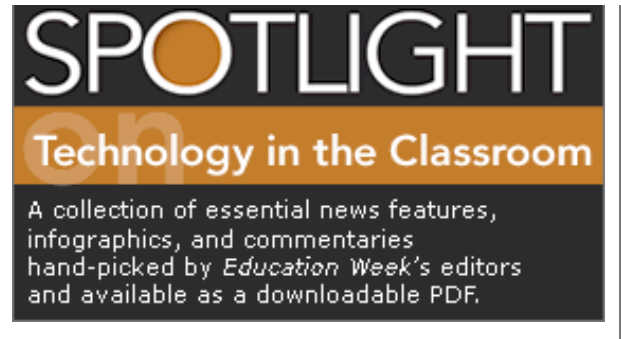
"Some [in my school] use it as a glorified chalkboard. Others just use it as a projector," one educator commented on the blog spot [Interactive Whiteboard Revolution](#) this past fall.

A writer at the Educational Technology & Change blog argued that there are less expensive alternatives to interactive whiteboards, or IWBs, and asked: "If you gave each of the teachers in a school the money that might be spent buying (and maintaining) an IWB, would they spend it on one, or would they find better uses for the money?"

The technology-enabled whiteboards are widely used in other developed countries, with one estimate that close to 90 percent of schools in the United Kingdom have them. They have also been more widely studied in the United Kingdom and Australia than in the United States, where research on their effectiveness is limited.

One recent study, though, suggests there can be multiple benefits to using interactive whiteboards as an integral part of instruction.

Robert J. Marzano, a prominent researcher who is co-founder and chief executive officer of Marzano Research Laboratory in Englewood, Colo., studied teaching and student outcomes in some 200



classes where teachers conducted lessons with and without interactive whiteboards. He **found significant benefits** when teachers used the boards, particularly among those who had been using the devices for more than two years, were confident in their skill with the boards' features, and used them for at least 75 percent of class time. The greatest benefits appeared to be in boosting student motivation and participation.

Promethean Inc., an Alpharetta, Ga.-based company that produces interactive whiteboards, sponsored the study in schools using its products. The company says that the positive results are associated with the unique features of the Promethean boards and the learning program, professional development, and online teacher network designed to go with them.

Marzano, however, says his research does not necessarily support those claims directly.

### **'Powerful Tool'**

Promethean's boards and the SMART boards produced by SMART Technologies, based in Calgary, Alberta, have become part of the nomenclature for the devices in schools, although products such as eBeam, Hitachi Starboard, PolyVision, and others have also gained a following because of their features or prices.

In Marzano's study, the Promethean boards were most effective when they gave students multiple opportunities to use the boards and the interactive features. Nearly one-fourth of the teachers, though, were more effective without the whiteboards.

That finding highlights one of Marzano's key conclusions from the study. The teachers who were most effective using the whiteboards displayed many of the characteristics of good teaching in general: They paced the lesson appropriately and built on what students already knew; they used multiple media, such as text, pictures, and graphics, for delivering information; they gave students opportunities to participate; and they focused mainly on the content, not the technology.

"These are things good teachers would do without technology," Marzano says. "Technically, you don't need to use the technology, but it's just so hard to do all these things without it."

The technology, he says, is a tool for making it easier to incorporate the elements of good teaching across content areas and among students with a range of academic knowledge and skills.

"I've lost my unbiased stance when it comes to technology," says Marzano, who was a teacher before becoming a well-known expert on content standards, curriculum, and instruction. "The whiteboard can be a powerful tool. If I had been a teacher in a classroom where I had access to those tools, I could have been a better teacher."